

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (Currently Amended) A catheter system comprising:

an insulated needle having a proximal end configured for fluid connection and a distal end configured for insertion through tissue and into a vicinity of a nerve or nerve plexus within a patient;

an electrically conductive wire coupled for supplying an electrical current to the insulated needle;

a catheter introducer having a distal end and a proximal end, wherein the distal end is made integral with the proximal end of the insulated needle, and wherein the proximal end of the catheter introducer comprises:

a cap portion in rotational securement with the distal end of the catheter introducer;

an elastic tube arranged about a rotational axis of the catheter introducer and fixedly attached to the cap portion and to the distal end of the catheter introducer;

wherein rotation of the cap portion relative to the distal end of the catheter introducer modifies an internal diameter of the elastic tube by wrapping one end of the elastic tube about the rotational axis; and

a catheter configured for insertion within and through the catheter introducer and the insulated needle, wherein the catheter is adapted to administer fluids within the vicinity of the nerve or nerve plexus.

2. (Original) The catheter system as recited in claim 1, wherein the proximal end of the insulated needle comprises a hub.
3. (Original) The catheter system as recited in claim 2, wherein the hub is permanently attached to the distal end of the catheter introducer by an adhesive material.
4. (Original) The catheter system as recited in claim 2, wherein the hub and the distal end of the catheter introducer are molded to form a single component of the catheter system.
5. (Currently Amended) The catheter system as recited in claim 1, wherein the proximal end of the catheter introducer comprises an integral a catheter threading assist guide, which is permanently attached to the proximal end of the catheter introducer to facilitate threading of the catheter through the catheter introducer and the insulated needle.
6. (Canceled)
7. (Currently Amended) The catheter system as recited in claim-6_1, wherein rotation of the cap portion reduces the internal diameter to seal an orifice of the catheter threading assist guide introducer against fluid leakage when the catheter is not arranged within the catheter introducer.
8. (Currently Amended) The catheter system as recited in claim-6_1, wherein rotation of the cap portion reduces the internal diameter to form a continuous, fluid-tight seal about the catheter when it is arranged within the catheter introducer.
9. (Currently Amended) The catheter system as recited in claim 8, wherein the catheter threading assist guide introducer is configured for maintaining the continuous, fluid-tight seal about the catheter before, during and after the catheter is inserted into the catheter threading assist guide.
10. (Currently Amended) The catheter system as recited in claim 8, wherein the catheter threading assist guide introducer is configured for maintaining the continuous, fluid-tight seal about an epidural or peripheral nerve catheter of substantially any size.

11. (Currently Amended) The catheter system as recited in claim-5_1, wherein the distal end of the catheter introducer comprises a side port that is coupled, through flexible tubing, to a fluid source and configured for fluid connection to the proximal end of the insulated needle.

12. (Original) The catheter system as recited in claim 11, wherein the side port extends in an orthogonal direction from a side surface of the distal end of the catheter introducer.

13. (Currently Amended) The catheter system as recited in claim-13_11, wherein the side port extends from a side surface of the distal end of the catheter introducer at an acute angle from a longitudinal axis of the catheter system.

14.-27. (Canceled)

28. (Currently Amended) A method for administering local anesthetic or other fluids to a nerve or plexus of nerves within a patient, the method comprising:

providing a catheter system, comprising (i) an insulated needle having a proximal end configured for fluid connection and a distal end configured for insertion through tissue and into a vicinity of the nerve or plexus of nerves, (ii) a catheter introducer having a distal end and a proximal end, wherein the distal end of the catheter introducer is ~~made integral with either permanently attached or molded to the~~ proximal end of the insulated needle, and wherein the proximal end of the catheter introducer comprises:

a cap portion in rotational securement with the distal end of the catheter introducer; and

an elastic tube arranged about a rotational axis of the catheter introducer and fixedly attached to the cap portion and to the distal end of the catheter introducer; and

preloading a catheter within the catheter introducer and into the proximal end of the insulated needle before the insulated needle, or any other component of the

catheter system, is inserted within the patient, wherein the catheter is adapted for administration of local anesthetic or other fluids; and

wherein during or after the step of preloading a catheter, the method further comprises
rotating the cap portion to wrap an inner surface of the elastic tube around an
outer surface of the catheter, thereby reducing an inner diameter of the elastic
tube to provide a continuous, fluid-tight seal around the outer surface of the
catheter, thus permitting, if desired, axial and rotational movement of the catheter
within the elastic tube without loss of the continuous, fluid-tight seal.

29. (Currently Amended) The method as recited in claim 28, wherein before, during or after the step of preloading a catheter, the method further comprises rotating the cap portion to wrap an inner surface of the elastic tube around an outer surface of the catheter about the rotational axis of the catheter introducer, thereby reducing an inner diameter of the elastic tube to provide a continuous, fluid-tight seal around the outer surface of the catheter, thus permitting, if desired, axial and rotational movement of the catheter within the elastic tube without loss of the continuous, fluid-tight seal an orifice of the catheter introducer against fluid leakage when the catheter is not arranged within the catheter introducer.

30. (Original) The method as recited in claim 29, after the step of preloading a catheter, the method further comprising:

inserting the distal end of the insulated needle through the tissue of the patient; and

detecting when the distal end of the insulated needle is in the vicinity of the nerve or nerve plexus by supplying an electrical current to the insulated needle via an electrically conductive wire coupled thereto.

31. (Currently Amended) The method as recited in claim 30, further comprising withdrawing aspirating fluid from the vicinity of the nerve plexus through a side port of the distal end of the catheter introducer to verify absence of blood or spinal fluid and correct positioning of the distal end of the insulated needle relative to the nerve plexus, wherein the step of rotating the cap portion prevents fluid leakage during the step of withdrawing the fluid.

32. (Original) The method as recited in claim 30, further comprising administering local anesthetic after forwarding the catheter through the insulated needle and into the vicinity of the nerve plexus, wherein the step of rotating the cap portion prevents fluid leakage during the step of administering local anesthetic.

33. (Original) The method as recited in claim 32, further comprising administering fluids to the patient through a flexible tube, which is coupled to a side port of the distal end of the catheter introducer, any time after the step of inserting the distal end of the insulated needle through the tissue of the patient, wherein the step of rotating the cap portion prevents fluid leakage during the step of administering fluids.

34. (Currently Amended) The method as recited in claim 35, further comprising providing the side port and the flexible tube with individual configurations that allow the step of administering fluids to be conducted without interference with anatomical features of the patient.

35. (Original) The method as recited in claim 34, wherein the step of administering local anesthetic and the step of administering fluids are conducted without a need for removing components from the catheter system.

36. (Original) The method as recited in claim 35, wherein the steps of rotating the cap portion and preloading the catheter function to simplify control of the catheter system by enabling a user to perform the step of rotating the cap portion using only one hand, while performing the step of preloading the catheter with the other hand.

37. (Original) The method as recited in claim 36, wherein the step of preloading the catheter, the step of rotating the cap portion, the step of providing the side port and the flexible tube, and the steps of administering local anesthetic and fluids function to minimize movement of the catheter system after the insulated needle is inserted within the tissue of the patient.